

Listing of Claims

Please cancel claims 76 and 77 without prejudice, amend claims 57 and 64, and add new claims 81 and 82, as shown below. This listing of claims will replace all prior versions and listings of claims in the application.

1. – 56. (Canceled)

57. (Currently Amended) A transgenic mouse comprising in its genome a human kappa light chain immunoglobulin transgene, said transgene containing five human light chain V κ segments, wherein the five human light chain V κ segments are L15, L18, L24, A10 and A27, a plurality of human light chain J κ segments, and a human light chain C κ segment, which segments are operably linked to transcription regulatory sequences and undergo rearrangement in B lymphocytes *in vivo* to produce a repertoire of rearranged transgenes encoding a plurality of human kappa light chain polypeptides, which human kappa light chain polypeptides are produced in said transgenic mouse.

58. (Canceled)

59. (Previously Presented) The transgenic mouse of claim 57, wherein said transgene further comprises a human 3' kappa enhancer segment.

60. (Previously Presented) The transgenic mouse of claim 59, wherein the human 3' kappa enhancer segment is a 4 kb *Bam*HI fragment containing the human 3' kappa enhancer.

61. (Previously Presented) The transgenic mouse of claim 57, wherein said mouse further comprises an inactivated endogenous mouse kappa light chain immunoglobulin gene locus.

62., 63. (Canceled)

64. (Currently Amended) A transgenic mouse comprising in its genome a human kappa light chain immunoglobulin transgene, said kappa light chain transgene containing five human light chain V κ segments, wherein the five human light chain V κ segments are L15, L18, L24, A10 and A27, a plurality of human light chain J κ segments, and a human light chain C κ segment, which segments are operably linked to transcription regulatory sequences and undergo rearrangement in B lymphocytes *in vivo* to produce a repertoire of rearranged transgenes encoding a plurality of human kappa light chain polypeptides, which human kappa light chain polypeptides are produced in said mouse, wherein said transgenic mouse further comprises a human heavy chain immunoglobulin transgene that produces a repertoire of human heavy chain polypeptides that pair with said kappa light chain polypeptides to form a repertoire of human immunoglobulins in said mouse.

65. (Canceled)

66. (Previously Presented) The transgenic mouse of claim 64, wherein said human kappa light chain immunoglobulin transgene further comprises a human 3' kappa enhancer segment.

67. (Previously Presented) The transgenic mouse of claim 66, wherein the human 3' kappa enhancer segment is a 4 kb *Bam*HI fragment containing the human 3' kappa enhancer.

68. (Previously Presented) The transgenic mouse of claim 64, wherein said mouse further comprises an inactivated endogenous mouse kappa light chain immunoglobulin gene locus and an inactivated endogenous mouse heavy chain immunoglobulin gene locus.

69., 70. (Canceled)

71. (Previously Presented) The transgenic mouse of claim 64, which produces antigen-specific human immunoglobulins when said transgenic mouse is immunized with an antigen.

72. – 77. (Canceled)

78. (Previously Presented) The transgenic mouse of claim 57, wherein the human kappa light chain immunoglobulin transgene is created by co-injection into a pronucleus of a mouse embryo of a yeast artificial chromosome (YAC) comprising multiple human V κ segments and at least one human immunoglobulin transgene comprising at least one human V κ segment, wherein the mouse embryo develops into said transgenic mouse.

79. (Previously Presented) The transgenic mouse of claim 78, wherein the YAC comprises at least 32 different V κ segments.

80. (Previously Presented) The transgenic mouse of claim 78, wherein the kappa light chain immunoglobulin transgene is created by co-injection into a pronucleus of a mouse embryo of a YAC comprising multiple human V κ segments, a first human immunoglobulin transgene comprising four human V κ segments and a second human immunoglobulin transgene comprising one human V κ segment, five human J κ segments, a human intronic enhancer, a human C κ and a human 3' kappa enhancer.

81. (New) The transgenic mouse of claim 57, wherein said human kappa light chain immunoglobulin transgene is KCo5.

82. (New) The transgenic mouse of claim 64, wherein said human kappa light chain immunoglobulin transgene is KCo5.